

attitude toward business transactions. But then I suspect that they don't enjoy their work as much as Signor Orsini did, either.

Without enjoyment life can be endured, and it can even be pleasant. But it can be so only precariously, depending on luck and the cooperation of the external environment. To gain personal control over the quality of experience, however, one needs to learn how to build enjoyment into what happens day in, day out.

The rest of this chapter provides an overview of what makes experience enjoyable. This description is based on long interviews, questionnaires, and other data collected over a dozen years from several thousand respondents. Initially we interviewed only people who spent a great amount of time and effort in activities that were difficult, yet provided no obvious rewards, such as money or prestige: rock climbers, composers of music, chess players, amateur athletes. Our later studies included interviews with ordinary people, leading ordinary existences; we asked them to describe how it felt when their lives were at their fullest, when what they did was most enjoyable. These people included urban Americans—surgeons, professors, clerical and assembly-line workers, young mothers, retired people, and teenagers. They also included respondents from Korea, Japan, Thailand, Australia, various European cultures, and a Navajo reservation. On the basis of these interviews we can now describe what makes an experience enjoyable, and thus provide examples that all of us can use to enhance the quality of life.

THE ELEMENTS OF ENJOYMENT

The first surprise we encountered in our study was how similarly very different activities were described when they were going especially well. Apparently the way a long-distance swimmer felt when crossing the English Channel was almost identical to the way a chess player felt during a tournament or a climber progressing up a difficult rock face. All these feelings were shared, in important respects, by subjects ranging from musicians composing a new quartet to teenagers from the ghetto involved in a championship basketball game.

The second surprise was that, regardless of culture, stage of modernization, social class, age, or gender, the respondents described enjoyment in very much the same way. *What* they did to experience enjoyment varied enormously—the elderly Koreans liked to meditate, the teenage Japanese liked to swarm around in motorcycle gangs—but they described *how* it felt when they enjoyed themselves in almost identical

terms. Moreover, the *reasons* the activity was enjoyed shared many more similarities than differences. In sum, optimal experience, and the psychological conditions that make it possible, seem to be the same the world over.

As our studies have suggested, the phenomenology of enjoyment has eight major components. When people reflect on how it feels when their experience is most positive, they mention at least one, and often all, of the following. First, the experience usually occurs when we confront tasks we have a chance of completing. Second, we must be able to concentrate on what we are doing. Third and fourth, the concentration is usually possible because the task undertaken has clear goals and provides immediate feedback. Fifth, one acts with a deep but effortless involvement that removes from awareness the worries and frustrations of everyday life. Sixth, enjoyable experiences allow people to exercise a sense of control over their actions. Seventh, concern for the self disappears, yet paradoxically the sense of self emerges stronger after the flow experience is over. Finally, the sense of the duration of time is altered; hours pass by in minutes, and minutes can stretch out to seem like hours. The combination of all these elements causes a sense of deep enjoyment that is so rewarding people feel that expending a great deal of energy is worthwhile simply to be able to feel it.

We shall take a closer look at each of these elements so that we may better understand what makes enjoyable activities so gratifying. With this knowledge, it is possible to achieve control of consciousness and turn even the most humdrum moments of everyday lives into events that help the self grow.

A Challenging Activity That Requires Skills

Sometimes a person reports having an experience of extreme joy, a feeling of ecstasy for no apparent good reason: a bar of haunting music may trigger it, or a wonderful view, or even less—just a spontaneous sense of well-being. But by far the overwhelming proportion of optimal experiences are reported to occur within sequences of activities that are goal-directed and bounded by rules—activities that require the investment of psychic energy, and that could not be done without the appropriate skills. Why this should be so will become clear as we go along; at this point it is sufficient to note that this seems to be universally the case.

It is important to clarify at the outset that an "activity" need not be active in the physical sense, and the "skill" necessary to engage in it need not be a physical skill. For instance, one of the most frequently mentioned enjoyable activities the world over is reading. Reading is an

activity because it requires the concentration of attention and has a goal, and to do it one must know the rules of written language. The skills involved in reading include not only literacy but also the ability to translate words into images, to empathize with fictional characters, to recognize historical and cultural contexts, to anticipate turns of the plot, to criticize and evaluate the author's style, and so on. In this broader sense, any capacity to manipulate symbolic information is a "skill," such as the skill of the mathematician to shape quantitative relationships in his head, or the skill of the musician in combining musical notes.

Another universally enjoyable activity is being with other people. Socializing might at first sight appear to be an exception to the statement that one needs to use skills to enjoy an activity, for it does not seem that gossiping or joking around with another person requires particular abilities. But of course, it does; as so many shy people know, if a person feels self-conscious, he or she will dread establishing informal contacts, and avoid company whenever possible.

Any activity contains a bundle of opportunities for action, or "challenges," that require appropriate skills to realize. For those who don't have the right skills, the activity is not challenging; it is simply meaningless. Setting up a chessboard gets the juices of a chess player flowing, but leaves cold anyone who does not know the rules of the game. To most people, the sheer wall of El Capitan in Yosemite valley is just a huge chunk of featureless rock. But to the climber it is an arena offering an endlessly complex symphony of mental and physical challenges.

One simple way to find challenges is to enter a competitive situation. Hence the great appeal of all games and sports that pit a person or team against another. In many ways, competition is a quick way of developing complexity: "He who wrestles with us," wrote Edmund Burke, "strengthens our nerves, and sharpens our skill. Our antagonist is our helper." The challenges of competition can be stimulating and enjoyable. But when beating the opponent takes precedence in the mind over performing as well as possible, enjoyment tends to disappear. Competition is enjoyable only when it is a means to perfect one's skills; when it becomes an end in itself, it ceases to be fun.

But challenges are by no means confined to competitive or to physical activities. They are necessary to provide enjoyment even in situations where one would not expect them to be relevant. For example, here is a quote from one of our studies, of a statement made by an art expert describing the enjoyment he takes in looking at a painting, something most people would regard as an immediate, intuitive process:

"A lot of pieces that you deal with are very straightforward . . . and you don't find anything exciting about them, you know, but there are other pieces that have some sort of challenge. . . . those are the pieces that stay in your mind, that are the most interesting." In other words, even the passive enjoyment one gets from looking at a painting or sculpture depends on the challenges that the work of art contains.

Activities that provide enjoyment are often those that have been designed for this very purpose. Games, sports, and artistic and literary forms were developed over the centuries for the express purpose of enriching life with enjoyable experiences. But it would be a mistake to assume that only art and leisure can provide optimal experiences. In a healthy culture, productive work and the necessary routines of everyday life are also satisfying. In fact, one purpose of this book is to explore ways in which even routine details can be transformed into personally meaningful games that provide optimal experiences. Mowing the lawn or waiting in a dentist's office can become enjoyable provided one restructures the activity by providing goals, rules, and the other elements of enjoyment to be reviewed below.

Heinz Maier-Leibnitz, the famous German experimental physicist and a descendant of the eighteenth-century philosopher and mathematician, provides an intriguing example of how one can take control of a boring situation and turn it into a mildly enjoyable one. Professor Maier-Leibnitz suffers from an occupational handicap common to academicians: having to sit through endless, often boring conferences. To alleviate this burden he invented a private activity that provides just enough challenges for him not to be completely bored during a dull lecture, but is so automated that it leaves enough attention free so that if something interesting is being said, it will register in his awareness.

What he does is this: Whenever a speaker begins to get tedious, he starts to tap his right thumb once, then the third finger of the right hand, then the index, then the fourth finger, then the third finger again, then the little finger of the right hand. Then he moves to the left hand and taps the little finger, the middle finger, the fourth finger, the index, and the middle finger again, and ends with the thumb of the left hand. Then the right hand reverses the sequence of fingering, followed by the reverse of the left hand's sequence. It turns out that by introducing full and half stops at regular intervals, there are 888 combinations one can move through without repeating the same pattern. By interspersing pauses among the taps at regular intervals, the pattern acquires an almost musical harmony, and in fact it is easily represented on a musical staff.

After inventing this innocent game, Professor Maier-Leibnitz found an interesting use for it: as a way of measuring the length of trains of thought. The pattern of 888 taps, repeated three times, provides a set of 2,664 taps that, with practice, takes almost exactly twelve minutes to perform. As soon as he starts tapping, by shifting attention to his fingers, Professor Maier-Leibnitz can tell exactly at what point he is in the sequence. So suppose that a thought concerning one of his physics experiments appears in his consciousness while he is tapping during a boring lecture. He immediately shifts attention to his fingers, and registers the fact that he is at the 300th tap of the second series; then in the same split second he returns to the train of thought about the experiment. At a certain point the thought is completed, and he has figured out the problem. How long did it take him to solve the problem? By shifting attention back to his fingers, he notices that he is about to finish the second series—the thought process has taken approximately two and a quarter minutes to play itself out.

Few people bother inventing quite such ingenious and complex diversions to improve the quality of their experiences. But all of us have more modest versions of the same. Everybody develops routines to fill in the boring gaps of the day, or to bring experience back on an even keel when anxiety threatens. Some people are compulsive doodlers, others chew on things or smoke, smooth their hair, hum a tune, or engage in more esoteric private rituals that have the same purpose: to impose order in consciousness through the performance of patterned action. These are the "microflow" activities that help us negotiate the doldrums of the day. But how enjoyable an activity is depends ultimately on its complexity. The small automatic games woven into the fabric of everyday life help reduce boredom, but add little to the positive quality of experience. For that one needs to face more demanding challenges, and use higher-level skills.

In all the activities people in our study reported engaging in, enjoyment comes at a very specific point: whenever the opportunities for action perceived by the individual are equal to his or her capabilities. Playing tennis, for instance, is not enjoyable if the two opponents are mismatched. The less skilled player will feel anxious, and the better player will feel bored. The same is true of every other activity: a piece of music that is too simple relative to one's listening skills will be boring, while music that is too complex will be frustrating. Enjoyment appears at the boundary between boredom and anxiety, when the challenges are just balanced with the person's capacity to act.

The golden ratio between challenges and skills does not only hold

true for human activities. Whenever I took our hunting dog, Hussar, for a walk in the open fields he liked to play a very simple game—the prototype of the most culturally widespread game of human children, escape and pursuit. He would run circles around me at top speed, with his tongue hanging out and his eyes warily watching every move I made, daring me to catch him. Occasionally I would take a lunge, and if I was lucky I got to touch him. Now the interesting part is that whenever I was tired, and moved halfheartedly, Hussar would run much tighter circles, making it relatively easy for me to catch him; on the other hand, if I was in good shape and willing to extend myself, he would enlarge the diameter of his circle. In this way, the difficulty of the game was kept constant. With an uncanny sense for the fine balancing of challenges and skills, he would make sure that the game would yield the maximum of enjoyment for us both.

The Merging of Action and Awareness

When all a person's relevant skills are needed to cope with the challenges of a situation, that person's attention is completely absorbed by the activity. There is no excess psychic energy left over to process any information but what the activity offers. All the attention is concentrated on the relevant stimuli.

As a result, one of the most universal and distinctive features of optimal experience takes place: people become so involved in what they are doing that the activity becomes spontaneous, almost automatic; they stop being aware of themselves as separate from the actions they are performing.

A dancer describes how it feels when a performance is going well: "Your concentration is very complete. Your mind isn't wandering, you are not thinking of something else; you are totally involved in what you are doing. . . . Your energy is flowing very smoothly. You feel relaxed, comfortable, and energetic."

A rock climber explains how it feels when he is scaling a mountain: "You are so involved in what you are doing [that] you aren't thinking of yourself as separate from the immediate activity. . . . You don't see yourself as separate from what you are doing."

A mother who enjoys the time spent with her small daughter: "Her reading is the one thing that she's really into, and we read together. She reads to me, and I read to her, and that's a time when I sort of lose touch with the rest of the world, I'm totally absorbed in what I'm doing."

A chess player tells of playing in a tournament: ". . . the concentra-

tion is like breathing—you never think of it. The roof could fall in and, if it missed you, you would be unaware of it."

It is for this reason that we called the optimal experience "flow." The short and simple word describes well the sense of seemingly effortless movement. The following words from a poet and rock climber apply to all the thousands of interviews collected by us and by others over the years: "The mystique of rock climbing is climbing; you get to the top of a rock glad it's over but really wish it would go on forever. The justification of climbing is climbing, like the justification of poetry is writing; you don't conquer anything except things in yourself. . . . The act of writing justifies poetry. Climbing is the same: recognizing that you are a flow. The purpose of the flow is to keep on flowing, not looking for a peak or utopia but staying in the flow. It is not a moving up but a continuous flowing; you move up to keep the flow going. There is no possible reason for climbing except the climbing itself; it is a self-communication."

Although the flow experience appears to be effortless, it is far from being so. It often requires strenuous physical exertion, or highly disciplined mental activity. It does not happen without the application of skilled performance. Any lapse in concentration will erase it. And yet while it lasts consciousness works smoothly, action follows action seamlessly. In normal life, we keep interrupting what we do with doubts and questions. "Why am I doing this? Should I perhaps be doing something else?" Repeatedly we question the necessity of our actions, and evaluate critically the reasons for carrying them out. But in flow there is no need to reflect, because the action carries us forward as if by magic.

Clear Goals and Feedback

The reason it is possible to achieve such complete involvement in a flow experience is that goals are usually clear, and feedback immediate. A tennis player always knows what she has to do: return the ball into the opponent's court. And each time she hits the ball she knows whether she has done well or not. The chess player's goals are equally obvious: to mate the opponent's king before his own is mated. With each move, he can calculate whether he has come closer to this objective. The climber inching up a vertical wall of rock has a very simple goal in mind: to complete the climb without falling. Every second, hour after hour, he receives information that he is meeting that basic goal.

Of course, if one chooses a trivial goal, success in it does not provide enjoyment. If I set as my goal to remain alive while sitting on the living-room sofa, I also could spend days knowing that I was achiev-

ing it, just as the rock climber does. But this realization would not make me particularly happy, whereas the climber's knowledge brings exhilaration to his dangerous ascent.

Certain activities require a very long time to accomplish, yet the components of goals and feedback are still extremely important to them. One example was given by a sixty-two-year-old woman living in the Italian Alps, who said her most enjoyable experiences were taking care of the cows and tending the orchard: "I find special satisfaction in caring for the plants: I like to see them grow day by day. It is very beautiful." Although it involves a period of patient waiting, seeing the plants one has cared for grow provides a powerful feedback even in the urban apartments of American cities.

Another example is solo ocean cruising, in which a person alone might sail for weeks in a small boat without seeing land. Jim Macbeth, who did a study of flow in ocean cruising, comments on the excitement a sailor feels when, after days of anxiously scanning the empty reaches of water, he discerns the outline of the island he had been aiming for as it starts to rise over the horizon. One of the legendary cruisers describes this sensation as follows: "I . . . experienced a sense of satisfaction coupled with some astonishment that my observations of the very distant sun from an unsteady platform and the use of some simple tables . . . enable[d] a small island to be found with certainty after an ocean crossing." And another: "Each time, I feel the same mixture of astonishment, love, and pride as this new land is born which seems to have been created for me and by me."

The goals of an activity are not always as clear as those of tennis, and the feedback is often more ambiguous than the simple "I am not falling" information processed by the climber. A composer of music, for instance, may know that he wishes to write a song, or a flute concerto, but other than that, his goals are usually quite vague. And how does he know whether the notes he is writing down are "right" or "wrong"? The same situation holds true for the artist painting a picture, and for all activities that are creative or open-ended in nature. But these are all exceptions that prove the rule: unless a person learns to set goals and to recognize and gauge feedback in such activities, she will not enjoy them.

In some creative activities, where goals are not clearly set in advance, a person must develop a strong personal sense of what she intends to do. The artist might not have a visual image of what the finished painting should look like, but when the picture has progressed to a certain point, she should know whether this is what she wanted to

achieve or not. And a painter who enjoys painting must have internalized criteria for "good" or "bad" so that after each brush stroke she can say: "Yes, this works; no, this doesn't." Without such internal guidelines, it is impossible to experience flow.

Sometimes the goals and the rules governing an activity are invented, or negotiated on the spot. For example, teenagers enjoy impromptu interactions in which they try to "gross each other out," or tell tall stories, or make fun of their teachers. The goal of such sessions emerges by trial and error, and is rarely made explicit; often it remains below the participants' level of awareness. Yet it is clear that these activities develop their own rules and that those who take part have a clear idea of what constitutes a successful "move," and of who is doing well. In many ways this is the pattern of a good jazz band, or any improvisational group. Scholars or debaters obtain similar satisfaction when the "moves" in their arguments mesh smoothly, and produce the desired result.

What constitutes feedback varies considerably in different activities. Some people are indifferent to things that others cannot get enough of. For instance, surgeons who love doing operations claim that they wouldn't switch to internal medicine even if they were paid ten times as much as they are for doing surgery, because an internist never knows exactly how well he is doing. In an operation, on the other hand, the status of the patient is almost always clear: as long as there is no blood in the incision, for example, a specific procedure has been successful. When the diseased organ is cut out, the surgeon's task is accomplished; after that there is the suture that gives a gratifying sense of closure to the activity. And the surgeon's disdain for psychiatry is even greater than that for internal medicine: to hear surgeons talk, the psychiatrist might spend ten years with a patient without knowing whether the cure is helping him.

Yet the psychiatrist who enjoys his trade is also receiving constant feedback: the way the patient holds himself, the expression on his face, the hesitation in his voice, the content of the material he brings up in the therapeutic hour—all these bits of information are important clues the psychiatrist uses to monitor the progress of the therapy. The difference between a surgeon and a psychiatrist is that the former considers blood and excision the only feedback worth attending to, whereas the latter considers the signals reflecting a patient's state of mind to be significant information. The surgeon judges the psychiatrist to be soft because he is interested in such ephemeral goals; the psychiatrist thinks the surgeon crude for his concentration on mechanics.

The kind of feedback we work toward is in and of itself often unimportant: What difference does it make if I hit the tennis ball between the white lines, if I immobilize the enemy king on the chessboard, or if I notice a glimmer of understanding in my patient's eyes at the end of the therapeutic hour? What makes this information valuable is the symbolic message it contains: that I have succeeded in my goal. Such knowledge creates order in consciousness, and strengthens the structure of the self.

Almost any kind of feedback can be enjoyable, provided it is logically related to a goal in which one has invested psychic energy. If I were to set myself up to balance a walking stick on my nose, then the sight of the stick wobbling upright above my face would provide a brief enjoyable interlude. But each of us is temperamentally sensitive to a certain range of information that we learn to value more than most other people do, and it is likely that we will consider feedback involving that information to be more relevant than others might.

For instance, some people are born with exceptional sensitivity to sound. They can discriminate among different tones and pitches, and recognize and remember combinations of sounds better than the general population. It is likely that such individuals will be attracted to playing with sounds; they will learn to control and shape auditory information. For them the most important feedback will consist in being able to combine sounds, to produce or reproduce rhythms and melodies. Composers, singers, performers, conductors, and music critics will develop from among them. In contrast, some are genetically predisposed to be unusually sensitive to other people, and they will learn to pay attention to the signals they send out. The feedback they will be looking for is the expression of human emotion. Some people have fragile selves that need constant reassurance, and for them the only information that counts is winning in a competitive situation. Others have invested so much in being liked that the only feedback they take into account is approval and admiration.

A good illustration of the importance of feedback is contained in the responses of a group of blind religious women interviewed by Professor Fausto Massimini's team of psychologists in Milan, Italy. Like the other respondents in our studies, they were asked to describe the most enjoyable experiences in their lives. For these women, many of whom had been sightless since birth, the most frequently mentioned flow experiences were the result of reading books in Braille, praying, doing handicrafts like knitting and binding books, and helping each other in case of sickness or other need. Of the over six hundred people inter-

viewed by the Italian team, these blind women stressed more than anyone else the importance of receiving clear feedback as a condition for enjoying whatever they were doing. Unable to see what was going on around them, they needed to know even more than sighted people whether what they were trying to accomplish was actually coming to pass.

Concentration on the Task at Hand

One of the most frequently mentioned dimensions of the flow experience is that, while it lasts, one is able to forget all the unpleasant aspects of life. This feature of flow is an important by-product of the fact that enjoyable activities require a complete focusing of attention on the task at hand—thus leaving no room in the mind for irrelevant information.

In normal everyday existence, we are the prey of thoughts and worries intruding unwanted in consciousness. Because most jobs, and home life in general, lack the pressing demands of flow experiences, concentration is rarely so intense that preoccupations and anxieties can be automatically ruled out. Consequently the ordinary state of mind involves unexpected and frequent episodes of entropy interfering with the smooth run of psychic energy. This is one reason why flow improves the quality of experience: the clearly structured demands of the activity impose order, and exclude the interference of disorder in consciousness.

A professor of physics who was an avid rock climber described his state of mind while climbing as follows: "It is as if my memory input has been cut off. All I can remember is the last thirty seconds, and all I can think ahead is the next five minutes." In fact, any activity that requires concentration has a similarly narrow window of time.

But it is not only the temporal focus that counts. What is even more significant is that only a very select range of information can be allowed into awareness. Therefore all the troubling thoughts that ordinarily keep passing through the mind are temporarily kept in abeyance. As a young basketball player explains: "The court—that's all that matters. . . . Sometimes out on the court I think of a problem, like fighting with my steady girl, and I think that's nothing compared to the game. You can think about a problem all day but as soon as you get in the game, the hell with it!" And another: "Kids my age, they think a lot . . . but when you are playing basketball, that's all there is on your mind—just basketball. . . . Everything seems to follow right along."

A mountaineer expands on the same theme: "When you're [climbing] you're not aware of other problematic life situations. It

becomes a world unto its own, significant only to itself. It's a concentration thing. Once you're into the situation, it's incredibly real, and you're very much in charge of it. It becomes your total world."

A similar sensation is reported by a dancer: "I get a feeling that I don't get anywhere else. . . . I have more confidence in myself than any other time. Maybe an effort to forget my problems. Dance is like therapy. If I am troubled about something, I leave it out of the door as I go in [the dance studio]."

On a larger time scale, ocean cruising provides an equivalent merciful oblivion: "But no matter how many little discomforts there may be at sea, one's real cares and worries seem to drop out of sight as the land slips behind the horizon. Once we were at sea there was no point in worrying, there was nothing we could do about our problems till we reached the next port. . . . Life was, for a while, stripped of its artificialities; [other problems] seemed quite unimportant compared with the state of the wind and the sea and the length of the day's run."

Edwin Moses, the great hurdler, has this to say in describing the concentration necessary for a race: "Your mind has to be absolutely clear. The fact that you have to cope with your opponent, jet lag, different foods, sleeping in hotels, and personal problems has to be erased from consciousness—as if they didn't exist."

Although Moses was talking about what it takes to win world-class sports events, he could have been describing the kind of concentration we achieve when we enjoy any activity. The concentration of the flow experience—together with clear goals and immediate feedback—provides order to consciousness, inducing the enjoyable condition of psychic negentropy.

The Paradox of Control

Enjoyment often occurs in games, sports, and other leisure activities that are distinct from ordinary life, where any number of bad things can happen. If a person loses a chess game or botches his hobby he need not worry; in "real" life, however, a person who mishandles a business deal may get fired, lose the mortgage on the house, and end up on public assistance. Thus the flow experience is typically described as involving a sense of control—or, more precisely, as lacking the sense of worry about losing control that is typical in many situations of normal life.

Here is how a dancer expresses this dimension of the flow experience: "A strong relaxation and calmness comes over me. I have no worries of failure. What a powerful and warm feeling it is! I want to expand, to hug the world. I feel enormous power to effect something of

grace and beauty." And a chess player: "... I have a general feeling of well-being, and that I am in complete control of my world."

What these respondents are actually describing is the *possibility*, rather than the *actuality*, of control. The ballet dancer may fall, break her leg, and never make the perfect turn, and the chess player may be defeated and never become a champion. But at least in principle, in the world of flow perfection is attainable.

This sense of control is also reported in enjoyable activities that involve serious risks, activities that to an outsider would seem to be much more potentially dangerous than the affairs of normal life. People who practice hang gliding, spelunking, rock climbing, race-car driving, deep-sea diving, and many similar sports for fun are purposefully placing themselves in situations that lack the safety nets of civilized life. Yet all these individuals report flow experiences in which a heightened sense of control plays an important part.

It is usual to explain the motivation of those who enjoy dangerous activities as some sort of pathological need: they are trying to exorcise a deep-seated fear, they are compensating, they are compulsively reenacting an Oedipal fixation, they are "sensation seekers." While such motives may be occasionally involved, what is most striking, when one actually speaks to specialists in risk, is how their enjoyment derives not from the danger itself, but from their ability to minimize it. So rather than a pathological thrill that comes from courting disaster, the positive emotion they enjoy is the perfectly healthy feeling of being able to control potentially dangerous forces.

The important thing to realize here is that activities that produce flow experiences, even the seemingly most risky ones, are so constructed as to allow the practitioner to develop sufficient skills to reduce the margin of error to as close to zero as possible. Rock climbers, for instance, recognize two sets of dangers: "objective" and "subjective" ones. The first kind are the unpredictable physical events that might confront a person on the mountain: a sudden storm, an avalanche, a falling rock, a drastic drop in temperature. One can prepare oneself against these threats, but they can never be completely foreseen. Subjective dangers are those that arise from the climber's lack of skill—including the inability to estimate correctly the difficulty of a climb in relation to one's ability.

The whole point of climbing is to avoid objective dangers as much as possible, and to eliminate subjective dangers entirely by rigorous discipline and sound preparation. As a result, climbers genuinely believe that climbing the Matterhorn is safer than crossing a street in Manhat-

ran, where the objective dangers—taxi drivers, bicycle messengers, buses, muggers—are far less predictable than those on the mountain, and where personal skills have less chance to ensure the pedestrian's safety.

As this example illustrates, what people enjoy is not the sense of *being* in control, but the sense of *exercising* control in difficult situations. It is not possible to experience a feeling of control unless one is willing to give up the safety of protective routines. Only when a doubtful outcome is at stake, and one is able to influence that outcome, can a person really know whether she is in control.

One type of activity seems to constitute an exception. Games of chance are enjoyable, yet by definition they are based on random outcomes presumably not affected by personal skills. The spin of a roulette wheel or the turn of a card in blackjack cannot be controlled by the player. In this case, at least, the sense of control must be irrelevant to the experience of enjoyment.

The "objective" conditions, however, happen to be deceptive, for it is actually the case that gamblers who enjoy games of hazard are subjectively convinced that their skills do play a major role in the outcome. In fact, they tend to stress the issue of control even more than practitioners of activities where skills obviously allow greater control. Poker players are convinced it is their ability, and not chance, that makes them win; if they lose they are much more inclined to credit bad luck, but even in defeat they are willing to look for a personal lapse to explain the outcome. Roulette players develop elaborate systems to predict the turn of the wheel. In general, players of games of chance often believe that they have the gift of seeing into the future, at least within the restricted set of goals and rules that defines their game. And this most ancient feeling of control—whose precursors include the rituals of divination so prevalent in every culture—is one of the greatest attractions the experience of gambling offers.

This sense of being in a world where entropy is suspended explains in part why flow-producing activities can become so addictive. Novelists have often written on the theme of chess as a metaphor for escape from reality. Vladimir Nabokov's short story "The Luchin Defense" describes a young chess genius so involved in the game that the rest of his life—his marriage, his friendships, his livelihood—is going by the boards. Luchin tries to cope with these problems, but he is unable to see them except in terms of chess situations. His wife is the White Queen, standing on the fifth square of the third file, threatened by the Black Bishop, who is Luchin's agent—and so forth. In trying to solve

his personal conflicts Luchin turns to chess strategy, and endeavors to invent the "Luchin defense," a set of moves that will make him invulnerable to outside attacks. As his relationships in real life disintegrate, Luchin has a series of hallucinations in which the important people around him become pieces on a huge chessboard, trying to immobilize him. Finally he has a vision of the perfect defense against his problems—and jumps out of the hotel window. Such stories about chess are not so farfetched; many champions, including the first and the last great American chess masters, Paul Morphy and Bobby Fischer, became so comfortable with the beautifully clear-cut and logically ordered world of chess that they turned their backs on the messy confusion of the "real" world.

The exhilaration gamblers feel in "figuring out" random chance is even more notorious. Early ethnographers have described North American Plains Indians so hypnotically involved in gambling with buffalo rib bones that losers would often leave the tepee without clothes in the dead of winter, having wagered away their weapons, horses, and wives as well. Almost any enjoyable activity can become addictive, in the sense that instead of being a conscious choice, it becomes a necessity that interferes with other activities. Surgeons, for instance, describe operations as being addictive, "like taking heroin."

When a person becomes so dependent on the ability to control an enjoyable activity that he cannot pay attention to anything else, then he loses the ultimate control: the freedom to determine the content of consciousness. Thus enjoyable activities that produce flow have a potentially negative aspect: while they are capable of improving the quality of existence by creating order in the mind, they can become addictive, at which point the self becomes captive of a certain kind of order, and is then unwilling to cope with the ambiguities of life.

The Loss of Self-Consciousness

We have seen earlier that when an activity is thoroughly engrossing, there is not enough attention left over to allow a person to consider either the past or the future, or any other temporarily irrelevant stimuli. One item that disappears from awareness deserves special mention, because in normal life we spend so much time thinking about it: our own self. Here is a climber describing this aspect of the experience: "It's a Zen feeling, like meditation or concentration. One thing you're after is the one-pointedness of mind. You can get your ego mixed up with climbing in all sorts of ways and it isn't necessarily enlightening. But when things become automatic, it's like an egoless thing, in a way.

Somehow the right thing is done without you ever thinking about it or doing anything at all. . . . It just happens. And yet you're more concentrated." Or, in the words of a famous long-distance ocean cruiser: "So one forgets oneself, one forgets everything, seeing only the play of the boat with the sea, the play of the sea around the boat, leaving aside everything not essential to that game. . . ."

The loss of the sense of a self separate from the world around it is sometimes accompanied by a feeling of union with the environment, whether it is the mountain, a team, or, in the case of this member of a Japanese motorcycle gang, the "run" of hundreds of cycles roaring down the streets of Kyoto: "I understand something, when all of our feelings get tuned up. When running, we are not in complete harmony at the start. But if the Run begins to go well, all of us, all of us feel for the others. How can I say this? . . . When our minds become one. At such a time, it's a real pleasure. . . . When all of us become one, I understand something. . . . All of a sudden I realize, 'Oh, we're one' and think, 'If we speed as fast as we can, it will become a real Run.' . . . When we realize that we become one flesh, it's supreme. When we get high on speed. At such a moment, it's really super."

This "becoming one flesh" so vividly described by the Japanese teenager is a very real feature of the flow experience. Persons report feeling it as concretely as they feel relief from hunger or from pain. It is a greatly rewarding experience, but as we shall see later on, one that presents its own dangers.

Preoccupation with the self consumes psychic energy because in everyday life we often feel threatened. Whenever we are threatened we need to bring the image we have of ourselves back into awareness, so we can find out whether or not the threat is serious, and how we should meet it. For instance, if walking down the street I notice some people turning back and looking at me with grins on their faces, the normal thing to do is immediately to start worrying: "Is there something wrong? Do I look funny? Is it the way I walk, or is my face smudged?" Hundreds of times every day we are reminded of the vulnerability of our self. And every time this happens psychic energy is lost trying to restore order to consciousness.

But in flow there is no room for self-scrutiny. Because enjoyable activities have clear goals, stable rules, and challenges well matched to skills, there is little opportunity for the self to be threatened. When a climber is making a difficult ascent, he is totally taken up in the mountaineering role. He is 100 percent a climber, or he would not survive. There is no way for anything or anybody to bring into question any

other aspect of his self. Whether his face is smudged makes absolutely no difference. The only possible threat is the one that comes from the mountain—but a good climber is well trained to face that threat, and does not need to bring the self into play in the process.

The absence of the self from consciousness does not mean that a person in flow has given up the control of his psychic energy, or that she is unaware of what happens in her body or in her mind. In fact the opposite is usually true. When people first learn about the flow experience they sometimes assume that lack of self-consciousness has something to do with a passive obliteration of the self, a “going with the flow” Southern California-style. But in fact the optimal experience involves a very active role for the self. A violinist must be extremely aware of every movement of her fingers, as well as of the sound entering her ears, and of the total form of the piece she is playing, both analytically, note by note, and holistically, in terms of its overall design. A good runner is usually aware of every relevant muscle in his body, of the rhythm of his breathing, as well as of the performance of his competitors within the overall strategy of the race. A chess player could not enjoy the game if he were unable to retrieve from his memory, at will, previous positions, past combinations.

So loss of self-consciousness does not involve a loss of self, and certainly not a loss of consciousness, but rather, only a loss of consciousness of the self. What slips below the threshold of awareness is the *concept* of self, the information we use to represent to ourselves who we are. And being able to forget temporarily who we are seems to be very enjoyable. When not preoccupied with our selves, we actually have a chance to expand the concept of who we are. Loss of self-consciousness can lead to self-transcendence, to a feeling that the boundaries of our being have been pushed forward.

This feeling is not just a fancy of the imagination, but is based on a concrete experience of close interaction with some Other, an interaction that produces a rare sense of unity with these usually foreign entities. During the long watches of the night the solitary sailor begins to feel that the boat is an extension of himself, moving to the same rhythms toward a common goal. The violinist, wrapped in the stream of sound she helps to create, feels as if she is part of the “harmony of the spheres.” The climber, focusing all her attention on the small irregularities of the rock wall that will have to support her weight safely, speaks of the sense of kinship that develops between fingers and rock, between the frail body and the context of stone, sky, and wind. In a chess tournament, players whose attention has been riveted, for hours,

to the logical battle on the board claim that they feel as if they have been merged into a powerful “field of force” clashing with other forces in some nonmaterial dimension of existence. Surgeons say that during a difficult operation they have the sensation that the entire operating team is a single organism, moved by the same purpose; they describe it as a “ballet” in which the individual is subordinated to the group performance, and all involved share in a feeling of harmony and power.

One could treat these testimonials as poetic metaphors and leave them at that. But it is important to realize that they refer to experiences that are just as real as being hungry, or as concrete as bumping into a wall. There is nothing mysterious or mystical about them. When a person invests all her psychic energy into an interaction—whether it is with another person, a boat, a mountain, or a piece of music—she in effect becomes part of a system of action greater than what the individual self had been before. This system takes its form from the rules of the activity; its energy comes from the person’s attention. But it is a real system—subjectively as real as being part of a family, a corporation, or a team—and the self that is part of it expands its boundaries and becomes more complex than what it had been.

This growth of the self occurs only if the interaction is an enjoyable one, that is, if it offers nontrivial opportunities for action and requires a constant perfection of skills. It is also possible to lose oneself in systems of action that demand nothing but faith and allegiance. Fundamentalist religions, mass movements, and extremist political parties also offer opportunities for self-transcendence that millions are eager to accept. They also provide a welcome extension of the boundaries of the self, a feeling that one is involved in something great and powerful. The true believer also becomes part of the system in concrete terms, because his psychic energy will be focused and shaped by the goals and rules of his belief. But the true believer is not really interacting with the belief system; he usually lets his psychic energy be absorbed by it. From this submission nothing new can come; consciousness may attain a welcome order, but it will be an order imposed rather than achieved. At best the self of the true believer resembles a crystal: strong and beautifully symmetrical, but very slow to grow.

There is one very important and at first apparently paradoxical relationship between losing the sense of self in a flow experience, and having it emerge stronger afterward. It almost seems that occasionally giving up self-consciousness is necessary for building a strong self-concept. Why this should be so is fairly clear. In flow a person is challenged to do her best, and must constantly improve her skills. At the time, she

doesn't have the opportunity to reflect on what this means in terms of the self—if she did allow herself to become self-conscious, the experience could not have been very deep. But afterward, when the activity is over and self-consciousness has a chance to resume, the self that the person reflects upon is not the same self that existed before the flow experience: it is now enriched by new skills and fresh achievements.

The Transformation of Time

One of the most common descriptions of optimal experience is that time no longer seems to pass the way it ordinarily does. The objective, external duration we measure with reference to outside events like night and day, or the orderly progression of clocks, is rendered irrelevant by the rhythms dictated by the activity. Often hours seem to pass by in minutes; in general, most people report that time seems to pass much faster. But occasionally the reverse occurs: Ballet dancers describe how a difficult turn that takes less than a second in real time stretches out for what seems like minutes: "Two things happen. One is that it seems to pass really fast in one sense. After it's passed, it seems to have passed really fast. I see that it's 1:00 in the morning, and I say: 'Aha, just a few minutes ago it was 8:00.' But then while I'm dancing . . . it seems like it's been much longer than maybe it really was." The safest generalization to make about this phenomenon is to say that during the flow experience the sense of time bears little relation to the passage of time as measured by the absolute convention of the clock.

But here, too, there are exceptions that prove the rule. An outstanding open-heart surgeon who derives a deep enjoyment from his work is well known for his ability to tell the exact time during an operation with only half a minute margin of error, without consulting a watch. But in his case timing is one of the essential challenges of the job: since he is called only to do a very small but extremely difficult part of the operation, he is usually involved in several operations simultaneously, and has to walk from one case to the next, making sure that he is not holding up his colleagues responsible for the preliminary phases. A similar skill is often found among practitioners of other activities where time is of the essence, for instance, runners and racers. In order to pace themselves precisely in a competition, they have to be very sensitive to the passage of seconds and minutes. In such cases the ability to keep track of time becomes one of the skills necessary to do well in the activity, and thus it contributes to, rather than detracts from, the enjoyment of the experience.

But most flow activities do not depend on clock time; like baseball,

they have their own pace, their own sequences of events marking transitions from one state to another without regard to equal intervals of duration. It is not clear whether this dimension of flow is just an epiphenomenon—a by-product of the intense concentration required for the activity at hand—or whether it is something that contributes in its own right to the positive quality of the experience. Although it seems likely that losing track of the clock is not one of the major elements of enjoyment, freedom from the tyranny of time does add to the exhilaration we feel during a state of complete involvement.

THE AUTOTELIC EXPERIENCE

The key element of an optimal experience is that it is an end in itself. Even if initially undertaken for other reasons, the activity that consumes us becomes intrinsically rewarding. Surgeons speak of their work: "It is so enjoyable that I would do it even if I didn't have to." Sailors say: "I am spending a lot of money and time on this boat, but it is worth it—nothing quite compares with the feeling I get when I am out sailing."

The term "autotelic" derives from two Greek words, *auto* meaning self, and *telos* meaning goal. It refers to a self-contained activity, one that is done not with the expectation of some future benefit, but simply because the doing itself is the reward. Playing the stock market in order to make money is not an autotelic experience; but playing it in order to prove one's skill at foretelling future trends is—even though the outcome in terms of dollars and cents is exactly the same. Teaching children in order to turn them into good citizens is not autotelic, whereas teaching them because one enjoys interacting with children is. What transpires in the two situations is ostensibly identical; what differs is that when the experience is autotelic, the person is paying attention to the activity for its own sake; when it is not, the attention is focused on its consequences.

Most things we do are neither purely autotelic nor purely exotelic (as we shall call activities done for external reasons only), but are a combination of the two. Surgeons usually enter into their long period of training because of exotelic expectations: to help people, to make money, to achieve prestige. If they are lucky, after a while they begin to enjoy their work, and then surgery becomes to a large extent also autotelic.

Some things we are initially forced to do against our will turn out in the course of time to be intrinsically rewarding. A friend of mine, with whom I worked in an office many years ago, had a great gift. Whenever